Project Code and Title

NATIONAL ACCIDENT SAMPLING SYSTEM (NASS)

Project Objective

To provide nationally representative data on fatal and nonfatal motor vehicle traffic crashes for use in better understanding the vehicle-trauma experience and to determine the national crash trend experience, consequently formulating the foundation for a comprehensive understanding of both the relationship between vehicle crash severity and occupant injury, and the scope of the highway safety problem.

Background

The National Accident Sampling System (NASS) has been in operation at various levels of development, implementation and operation since 1978. The NASS program was re-evaluated in the mid-1980's. This re-evaluation resulted in changes which were implemented by the National Highway Traffic Safety Administration (NHTSA) in January 1988. NASS now has two major operating components:

1. The General Estimate System (GES) which collects data on an annual sample of approximately 52,000 police traffic crash reports; and

2. the Crashworthiness Data System (CDS) which collects additional detailed information on an annual sample of approximately 5,000 police reported traffic crashes involving a towed passenger car, van or truck that is less than or equal to 10,000 pounds GVWR.

Problem Definition

There are more than 10.6 million police reported motor vehicle traffic crashes each year in the United States resulting in death, injury and property damage at a substantial economic loss to society. It is the mission of NHTSA to reduce the number of motor vehicle crashes, deaths and injuries, and consequently the associated economic loss to society resulting from motor vehicle crashes. NASS data are critical to understanding real-world motor vehicle crash performance and the injury risk as a function of crash severity. Data are obtained for comparison of these risks from assessment of the damage to crash involved motor vehicles, assessment of the performance of motor vehicle occupant safety devices, and documentation of injuries sustained by crash victims.

Research Approach

NASS CDS data are collected at 24 sites in 17 states and NASS GES data are collected at 60 sites (including the 24 CDS sites) in 26 states. Police reported crashes are sampled according to a complex algorithm to produce nationally representative crash data. Highly specialized NASS CDS Researchers under contract to the agency collect data at the crash scene, inspect the vehicle(s) for specific damage and countermeasure performance, identify injuries from hospital or other medical records, and determine causes of injury.

NASS data have been electronically coded in computerized data files for statistical analysis since 1979. NASS CDS has investigated and collected detailed data on a sample of over 110,000 minor, serious, and fatal crashes. Custom software incorporating automated quality control is used for data entry. Separate contractors perform extensive quality control reviews of field case sampling procedures and non-automated data such as scene diagrams and vehicle damage sketches. Additional case data, such as vehicle photographs and scene diagrams, are retained for detailed analysis by the agency and the highway safety community. Contractor staff are trained in NASS investigation procedures at the Transportation Safety Institute in Oklahoma City, Oklahoma. Performance of contractor staff is carefully monitored against defined goals to assure accuracy and completeness of crash sampling and data collection.

Police reports used as the source for GES data are collected by CDS teams adjacent to GES sites or part-time contractor personnel at remote GES sites. Data are converted to a common format and coded to the electronic file at one central contractor location. All CDS and GES data are carefully controlled to protect the privacy of involved persons. NASS data are available in electronic data files and in annual reports for selected years. These data are essential to a variety of regulatory and enforcement initiatives. Currently NASS data are supporting rulemaking in light truck side impact protect, light vehicle rollover crash protection, head injury protection, and occupant ejection, and fuel system integrity. Other uses of NASS data include in-depth engineering analyses of crashes involving automatic occupant protection systems such as air bags and evaluation of pre-crash avoidance maneuvers for the problem definition stage of Intelligent Transportation Systems (ITS) specifications to improve the man/machine interface in crash events.

Detailed data have also been collected on over 12,000 special study crashes that focused on specific highway crash issues. Current and planned special studies are as follows:

- Pedestrian Crash Data Study
  In late 1995, a 3-year Pedestrian Crash Data Study was implemented in NASS CDS to update pedestrian injury patterns in impacts with late model year passenger vehicles. The expected annual yield is 300 cases. The investigations are conducted on scene at 6 urban NASS locations.

- Unsafe Driver Actions Special Study
  In the spring of 1996, a 2-year Unsafe Driver Actions Special Study was implemented in NASS CDS to identify specific actions(s) taken by the driver of the vehicle that initiated the crash sequence and further identify the cause(s) of that action. This study is co-sponsored by FHWA and NHTSA's Traffic Safety Programs. Four sites begin data collection in April 1996 with possible expansion to 12 sites in CY 1997.

- Run-Off-Run Special Study
  This study is sponsored by FHWA and is currently being developed. Implementation is scheduled for calendar year 1997. Data collected will be used to determine the role that roadside objects play in causing or preventing injuries to motor vehicle crash victims.

Potential Impact/Application

The vehicle-trauma detail from 5000 crash investigations and the national crash trend data from 52,000 police reported crashes form the foundation for a comprehensive understanding of both the relationship between vehicle crash severity and occupant injury, and the scope of the highway safety problem. These data are not available from any other data system. NASS is a key data source for measuring the traffic safety performance goals of NHTSA and all its major programs (Safety Performance Standards, Safety Assurance, Research and Development, and Traffic Safety Programs). It is also an essential data source for its customers (internal and Departmental offices, other Federal agencies, research organizations, and interest groups).

Key Milestones

The performance measures for NHTSA under the Government Performance and Results Act include the creation of annual electronic data files for NASS by the annual target dates of August for CDS and September for GES.

RESOURCE REQUIREMENTS	FY 96	FY 97	FY 98	FY 99	FY 00
Contract Money ($K)	9.2	9.67	13.8	13.8	14.2

Project Manager(s)

Gary Toth	- NASS Field Data Collection
Marvin Stephens	- NASS CDS Electronic Data File
Terry Shelton	- NASS GES Electronic Data File

Completion Date

See Project Tasks below.

Publications

1. National Accident Sampling System Crashworthiness Data System (A three year compilation that is published annually).
   - Most recent available publication: 1992-1994

2. Traffic Safety Facts - A Compilation of Motor Vehicle Crash Data from the Fatal Accident Reporting System and the General Estimates System (Published Annually).
   - Most recent available publication: 1995

Keywords: Crashworthiness, General Estimates, representative sample, passenger cars, light trucks, vans, towed, air bags, injuries, vehicle damage

Project Tasks

Task	Title and Description
Tasl 1	Eastern NASS Zone Center and PSUs - data collection, data automation, quality control
Task 2	Western NASS Zone Center and PSUs - data collection, data automation, quality control
Task 3	NASS CDS Automated Data Process, Distribution and Hard Copy Storage
Task 4	NASS GES Data Entry and Quality Control
Task 5	NASS Training
Task 6	NASS and Special Crash Investigations (SCI) Field and Data Processing Support

Task	Start Date	Projected Completion Date	Status/Responsibility
#1	FY93	FY997	Active; Calspan Corporation
#2	FY93	FY997	Active; KLD Associates, Inc.
#3	FY90	FY99	Active; Volpe National Transportation Center
#4	FY95	FY97	Active; Information Systems and Services, Inc.
#5	FY90	FY99	Active; Transportation Safety Institute
#6	FY94	FY98	Active; Information Dynamics, Inc.

Supporting Contracts

Task	Contract Number	COTR (phone)	Contracting Officer (phone)	Total Contract Cost ($K)
#1	DTNH22-93-C-07034	Gary Toth	Janice Flemming	
#2	DTNH22-93-C-07035	Gary Toth	Janice Flemming	
#3	GWA-96	Marvin Stephens	Ray Sakay	
#4	DTNH22-95-D-01747	Terry Shelton	Karen Brockmeir	
#5	DTNH22-90-X-07097	William Evans	Linda Boor	
#6	DTNH22-94-C-07257	Marvin Stephens	Doris Medley	